The Mets, The Scalpels, and Possibly the Beams

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There just aren't a lot of experts that can write the gospel of how to handle the patient with pulmonary metastases, and that is why the article by Internullo[1] in this edition of the *Journal of Thoracic Oncology* is so valuable. The thoracic surgical community must at times take stock of itself and make sure that the message for the management of these patients, although not carved in evidence-based tablets of stone, is reasonable.

Frankly what we learn from the article are not long term results from the management of these patients, as documented in the International Registry[2] (which remains the standard of care with regard to this topic), but that the European Society of Thoracic Surgeons has incorporated the most important principles of management into their diverse practices which conform to "guidelines" which have been published in the literature before. First of all, if the primary is not controlled, it makes no sense to do a metastasectomy. Nevertheless, there is some controversy here, especially in the case of the synchronous presentation of metastases and primary lesion since there is a feeling among the group that this is not a good situation as 47% felt that this is a contraindication to metastasectomy. This is one of many situations with metastasectomy that requires exploration of the circumstances and careful tailored management, i.e., if the patient has a limb sarcoma and the decision is whether to perform an amputation or limb salvage in the patient presenting with pulmonary metastases, would it not be useful to know whether the metastases were resectable? If they were not, then every attempt would be made to perform a local operation which would not remove the limb. The corollary is that with the synchronous presentation, if the primary lesion can be controlled with local or systemic therapy, then why would you not follow with a metastasectomy if the patient were deemed to be a resection candidate after control of the primary?

How aggressive to be with this population, with regards to the extent of resection as well as the approach to achieve that "complete resection" also remains a point of controversy. It's a relatively simple decision if there is only one new pulmonary nodule, and this is usually the case with a previous carcinoma. Moreover, the reason to operate may not just be to remove a possible metastasis but to make sure that the patient does not have a secondary lung cancer. When there are multiple nodules, however, it is encouraging to see that the European community endorses resection even if they are bilateral. Despite some surgeons who will limit the number of redo explorations to five, one gets the feeling that an aggressive approach is used for the management of these patients, similar to the approach used in the United States.

But . . . . what don't we know? We don't know whether surgery is really prolonging the lives of these patients in the absence of a randomized trial. Will a randomized trial ever be done to answer this question? I seriously doubt it due to the heterogeneity of approaches, indications, and low numbers of patients to put in the trial without international cooperation. What one should ask, however, and why thoracic surgeons are looking over their shoulder, is whether surgery will persist as the mechanism for local control of these lesions. With the remarkable advances in 4-D techniques for the delivery of radiation therapy, as well as the international interest in stereotactic body radiation therapy,[3] will surgery remain the standard procedure for ablation of these lesions? Will patients prefer

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an operation, as opposed to 3 sessions of 10 to 20 minutes of Stereotactic Body Radiation Therapy (SBRT) even if they are strapped in a body frame? Personally, I think it is going to be difficult for surgeons to compete with these new technologies, even if the surgeons argue that they can do it by video-assisted thoracoscopic surgery, with low operative mortality. The name of the game in 2008 is minimally invasive with minimal toxicity, and that is where novel radiation therapies as well as percutaneous cold probes and microwaves and radiofrequency waves are going. Trials are already being set up for SBRT to be used in patient with resectable lung cancer; some institutions are already "off label" treating pulmonary metastases with stereotactic techniques.[4,5]

This is where evidenced-based thinking must go with metastasectomy. Before there is no standardization of SBRT methodology for lung metastases, we need to think about single metastasis trials comparing the new techniques to surgery . . . whatever surgery . . . . but *consistent surgery* (most likely by wedge resection). Truly such a trial will be limited by the size and number of nodules and their location (SBRT toxicity profiles for the lung are well described for peripheral lesions but not for central ones), but clinicians need to know that the new therapies are at least as effective as the standard invasive ones when used in the proper context.

We might find out that the future of metastasectomy is turning on the beam and turning off the lights in the operating room, but let's do this with some evidence behind it.

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